



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/673,744

09/29/2003

Martin Tross

IL920030033US1

1477

7590

05/02/2006

Stephen C. Kaufman
Intellectual Property Law Dept.
IBM Corporation
P.O. Box 218
Yorktown Heights, NY 10598

EXAMINER

KO, DANIEL BOKMIN

ART UNIT

PAPER NUMBER

2189

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/673,744	Applicant(s) TROSS ET AL.	
	Examiner Daniel B. Ko	Art Unit 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to the Amendment filed on 02/23/2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-5, 7-25, 27-45 and 47-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohno et al. (U.S. Patent 6,950,915), hereinafter simply Ohno.

Regarding claims 1, 21, and 41, Ohno teaches following:

receiving the data at the primary storage subsystem from a host processor
(column 9, lines 1-5);

writing the data to the first volatile cache memory in the primary storage
subsystem (column 9, lines 6-9);

copying the data from the primary storage subsystem to the secondary storage
subsystem (column 4, lines 26-28; column 9, lines 14-15);

writing the copied data to the second volatile cache memory in the secondary
storage subsystem (column 9, lines 21-23);

returning an acknowledgment from the secondary storage subsystem to the primary storage subsystem responsively to writing the copied data to the second volatile cache memory and prior to saving the data in the second non-volatile storage media (column 9, lines 26-27);

signaling the host processor that the data have been stored in the data storage system responsively to the acknowledgment from the secondary storage subsystem (column 9, lines 28-30); and

transferring the data in the primary and secondary storage subsystems from the first and second volatile cache memories to the first and second non-volatile storage media, respectively (column 7, lines 58-67).

Regarding claims 2-3, 22-23, and 42-43, Ohno's device transmits data on communication link between the sites (column 4, lines 38-53; column 5, lines 1-6; column 9, lines 14-17).

Regarding claims 4-5, 24-25, 44-45, Ohno teaches a mirror systems (column 4, lines 26-28; column 9, lines 14-17) and upon occurrence of a failure in the primary storage subsystem, configuring the secondary storage subsystem to serve as the primary storage subsystem so as to receive further data from the host processor to be stored by the data storage system (column 1, lines 29-40).

Regarding claims 7, 14, 27, 34, 47, and 54, Ohno teaches a method, wherein transferring the data comprises sending a message from the secondary storage subsystem to the primary storage subsystem indicating addresses of the data that have been transferred to the second non-volatile storage media (column 9, lines 14-17), and wherein the method further comprises creating a record on the primary storage subsystem of the addresses of the data copied to the secondary storage subsystem, and updating the record in response to the message (column 12, lines 14-37).

Regarding claims 8-10, 15-17, 28-30, 35-37, 48-50, and 55-57, Ohno teaches a method comprising, upon recovery of the system from a failure of the secondary storage subsystem, conveying, responsively to the record, a portion of the data from the primary storage subsystem to be stored on the secondary storage subsystem (column 12, lines 22-25) and updating the record comprises removing from the record the addresses of the data that have been transferred to the second non-volatile storage media (column 12, lines 14-50) and creating the record comprises marking respective bits in a bitmap corresponding to addresses of the data copied to the secondary storage subsystem, and wherein updating the record comprises clearing the respective bits (column 12, lines 38-50).

Regarding claims 11-13, 18-20, 31-33, 38-40, 51-53, and 58-60, Ohno teaches a method, wherein transferring the data comprises transferring the data in a range of the addresses from the second volatile cache memory to the second non-volatile storage

Art Unit: 2189

media (column 10, lines 1-4), and wherein sending the message comprises informing the primary storage subsystem that the data in the range have been transferred, so that the primary storage subsystem updates the record with respect to the range (column 12, lines 14-22) and transferring the data comprises sending a message from the primary storage subsystem to the secondary storage subsystem indicating addresses of the data that have been transferred to the first non-volatile storage media, and wherein the method further comprises creating a record on the secondary storage subsystem of the addresses of the data copied to the secondary storage subsystem, and updating the record in response to the message (column 12, lines 2-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2189

2. Claims 6, 26 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (U.S. Patent 6,950,915) in view of Abe et al. (U.S. Patent Application 2003/0031319 A1), hereinafter simply Abe.

Regarding claims 6, 26, and 46, Ohno teaches the limitations of the claims as set forth for claims 1 and 4 other claims above. However, Ohno does not teach a fee-per-service for transferring the data. Abe teaches teach a fee-per-service for transferring the data (paragraph 429). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Ohno with Abe. The motivation for doing so would have been an efficient accounting function that manages accounting information about the users receiving the content data (paragraphs 429 and 420).

Response to Arguments

Examiner withdraws the claim objections regarding claims 21 and 41, because of amended claims 21 and 41.

Applicant's arguments with respect to claim 1-60 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2189

Conclusion

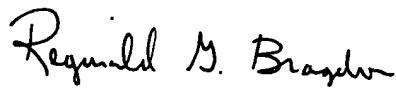
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel B. Ko whose telephone number is 571-272-8194.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald G. Bragdon can be reached on 571-272-4204. The fax phone number for the organization where this application or proceeding is assigned is 703-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel B. Ko
AU 2189



REGINALD G. BRAGDON
PRIMARY EXAMINER